Chem 123 Fall 2012 Syllabus

Instructor: Dr. Kristi Kincaid (DBH 242; kincaid@rice.edu)

Office hours: by appointment

Classroom coordinator: Sofia Medrano (DBH 243, smedrano@rice.edu

Course Philosophy and Aims

This course is part of a two semester sequence designed to enhance the material from the general chemistry lecture course and prepare you to enter a scientific research environment. This first semester is focused on teaching the student to think critically as a scientist, and how to develop an experimental approach to chemistry. The skills (both mental and physical) that you will learn in these courses are applicable to any scientific discipline that you may pursue.

Schedule:

There are 8-9 different sections that meet each week. Each section will follow a 2-week sequence, with the lab performed the first week, and a discussion of data analysis session taking place in the second week. Sections are staggered so that there will be two concurrent sections (one in lab and one in discussion) running most weeks. **EVEN** numbered sections will start the second week of classes, and **ODD** numbered sections will start the third week

See schedule below for details:

Week	Dates	Even Numbered Sections	Odd numbered sections
1	Aug 20-24	SAFETY LECTURE	SAFETY LECTURE
2	Aug 27-31	Lab1: Stoichiometry	NO MEETING*
3	Sep 3-7	Discussion 1	Lab1: Stoichiometry
4	Sep 10-14	Lab 2: Chemical Reactivity	Discussion 1
5	Sep 17-21	Discussion 2	Lab 2: Chemical Reactivity
6	Sep 24-28	Lab 3: Atomic Spectra	Discussion 2
7	Oct 1-5	Discussion 3	Lab 3: Atomic Spectra
8	Oct 8-12	FALL BREAK	FALL BREAK
9	Oct 15-19	Lab 4: Molecular Structures	Discussion 3
10	Oct 22-26	Discussion 4	Lab 4: Molecular Structures
11	Oct 29-Nov 2	Lab 5: Thermochemistry	Discussion 4
12	Nov 5-9	Discussion 5	Lab 5: Thermochemistry
13	Nov 12-16	CHECKOUT	Discussion 5
14	Nov 19-23	THANKSGIVING	THANKSGIVING
15	Nov 26-30	NO MEETING	CHECKOUT

*The even-numbered Monday night section DOES meet the first week, due to the Labor Day holiday in the following week

During Lab weeks, students will meet in room 214 DBH for a brief pre-lab lecture before moving to room 200. Discussion groups will meet in room 210 DBH. During your first lab meeting, you will be assigned to one of 2 discussion groups for your section.

Course Requirements:

Attendance is mandatory for **every** lab and **every** discussion session (see grading section for details). Punctuality is also mandatory; points will be deducted from your grade for tardiness. Extremely late students (>15 minutes) may not be admitted to lab.

At the beginning of the semester, you will need to sign a form on OwlSpace *(under tests & quizzes)* that you have read and agree to abide by the lab safety rules. You are required to wear closed-toe shoes, safety glasses, and a lab coat when working in room 200. The Chemistry Graduate Student Association (CGSA) will be selling lab coats[1]. Safety glasses are provided for you in the lab.

You will also need to purchase a lab notebook that contains carbon copy sheets (also available from the CGSA).

Lab Citizenship:

Anyone who pursues a career in the sciences will work within a group of other researchers in one way or another (unless you are extremely rich and extremely eccentric). Because of this, it is important to learn how to be a good lab citizen. Good lab citizenship generally can be summed up by the golden rule: treat others as you would like to be treated. Specifically, some key components are:

- ***Respect*** *for others in conversation and space use*
- ***Tidiness*** *in common use areas*
- ***Conscientious*** *use of shared reagents*
- ***Openness*** *to scientific discussion with labmates*
- *Leaving your work area in a* ***clean*** *and* ***safe*** *state*

Lab Reports:

The lab procedures and reports will be posted on OwlSpace. Prior to lab, you will need to download and read the experiment for the week (including any background reading), and print out the lab procedure. You will also need to complete a pre-lab assignment prior to coming to lab; this consists of writing down a plan for the day's lab, which includes to order in which you will execute the experiment and the data you will need to collect. You should come to lab prepared to discuss the lab in-depth and be able to make predictions about any outcomes.

[1] $20 (cash or check only, NO CREDIT CARDS); time and location will be announced in class

During lab, you will record your data in your lab notebook; the specific format and requirements for the report will be explained in the individual labs. Preliminary analysis of your data will be due to your discussion TA at the beginning of discussion the following week. A final lab report, including data analysis and additional questions, will be due to your lab TA at the beginning of your next lab section (2 weeks after data collection).

Honor policy: Lab reports fall under the scope of Rice's honor code. Discussion is an important part of the scientific process, and you are encouraged to ***discuss*** the lab with your partner, TAs, and other classmates. However, you must complete your own report, including all calculations and conclusions; be mindful of the difference between collaboration and copying.

Lab Notebook:

Your lab notebook is a record of what you DO and OBSERVE in lab. It is not a simple collection of data tables or a jumble of disorganized scribbles. An ideal notebook allows another scientist to recreate your experiment from only what is written down. You are required to use the carbon copy style notebooks, and you will turn in the copies to your TA at the end of each lab. Additional data analysis and final reports may be done on a computer or regular paper, but all of the data used must come from the information that you recorded in lab.

Grading:

Each lab will be worth 50 points (250 points total). These points will be divided between the lab report and participation points from your discussion section. Points can (and will!) also be added or deducted to your lab report based on lab citizenship (see above). Points will be deducted for tardiness to class. Late reports will be docked points for each day late (5pts/day). Reports will not be accepted more than one week late.

At the end of the semester, your total lab points will be added to your points from Chem 121 (750 possible) to give your final letter grade for both courses (out of a total of 1000 points).

Attendance is mandatory for every lab and every discussion in this course. If you fail to make arrangements for a missed lab or discussion, you will receive **zero** points for that lab.

*Missed labs***:** It is your responsibility to contact Dr. Kincaid as soon as possible when you miss a lab. For approved university commitments, contact Dr. Kincaid at least one week in advance of your absence so that you can reschedule to attend a different section that same week. For unscheduled absences, such as severe illness, contact Dr. Kincaid as soon as you realize you will not be able to attend, and arrangements can be made to make up the lab. In the event of making up a lab, your lab report will still be due at the regularly scheduled time.

Regrading:

If you think you were graded incorrectly, you may submit your report for a regrade. Please keep in mind that it is worth neither your nor my time to regrade a lab report for 1 or 2 points, and unless the error is one of simple miscalculation of the total points, it is unlikely that your request will be successful. **Submit all regrade requests to Sofia Medrano**; do NOT submit a regrade request to your TA. You have **3 days** after a lab is returned to you to submit a regrade request. To ensure proper record keeping do NOT write on your original lab report; instead, submit a separate sheet of paper with your reasons for requesting a regrade.

Safety:

Lab safety is taken very seriously at Rice. As mentioned above, closed-toe shoes, safety glasses, and lab coats are required when we are in room 200. Even if you feel that you aren't doing anything dangerous, it is important to always follow safety rules in the lab. This is because lab safety procedures are designed to protect you not only from your own actions, but also from those around you and those that have been in the lab before you. You may be clean and careful, but the person next to you may not be, or the person who used the bench prior to you may have left an acid spill there.

Cubbies are provided to store your bags and backpacks; they are not to be placed on the floor or on the bench.

There will be **absolutely no eating or drinking** allowed in the lab. Period. It is also highly recommended that you wash your hands upon leaving the lab.

Students under 18:

Your parents or legal guardian are required to sign a "Release and Hold Harmless Agreement" before you can work in the lab. Download this form from OwlSpace and turn in a signed paper copy to Sofia Medrano. Your parent may also fax this form to 713-348-3479.

Phones: phones, ipods, etc. are to be silenced or turned off, and left in your bag.

Special Needs:

Any student with a disability requiring accommodations in this class is encouraged to contact the instructor during the first two weeks of class. All discussions will remain confidential. Students should also contact the Disabled Student Services Office in the Ley Student Center.